

REMARKS

Claims 9-24 remain pending after response.

Withdrawn Rejection

Applicants acknowledge with appreciation the withdrawal of the previous rejection under 35 USC 103(a).

Applicants' Invention

By way of review, applicants' invention is directed to an optical laminate, comprising a cholesteric liquid crystal layer and a quarter-wave plate laminated on the cholesteric liquid crystal layer, wherein

(i) the quarter-wave plate includes at least one layer of a material having a positive intrinsic birefringence value (layer A) and at least one layer of a material having a negative intrinsic birefringence value (layer B),

(ii) the layer A and the layer B having the same molecular chain orientation,

(iii) the quarter-wave plate having a variation in thickness of 5% or less,

(iv) the quarter-wave plate is obtained by stretching a laminate obtained by co-extruding the material having a positive intrinsic birefringence value and the material having a negative intrinsic birefringence value, and

(v) the material having a positive intrinsic birefringence value is an alicyclic structure-containing polymer resin having a content of a resin component with a molecular weight of 2000 or less of 5 wt% or less.

Rejection under 35 USC 103(a)

Claims 9-24 stand rejected under 35 USC 103(a) as being unpatentable over Arakawa '925 in view of Kameyama et al '139. This rejection is respectfully traversed.

In support of the rejection, the Examiner takes the position that Arakawa discloses an optical laminate comprising a quarter-wave plate wherein the quarter-wave plate includes at least one layer of a material having a positive intrinsic birefringence value, and at least one layer of a material having a negative intrinsic birefringence value, with the layers A and B having the same molecular chain orientation, the quarter-wave plate having a variation in thickness of 5% or less, a target thickness of 100 μm , an actual thickness of 102 μm , a variation of 2%, with the quarter-wave plate formed by the recited method.

The Examiner concedes that the reference “does not expressly disclose wherein the optical laminate further comprises a cholesteric liquid crystal layer and a quarter-wave plate laminated on the cholesteric liquid crystal layer.” The Kameyama reference is stated to teach an optical laminate “wherein the optical laminate further comprises a cholesteric liquid crystal layer (12, 13) and a quarter-wave plate (2) laminated on the cholesteric liquid crystal layer (12, 13)”.

The Examiner accordingly concludes:

“It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the quarter-wave /cholesteric LC layer combination of Kameyama in the optical laminate of Arakama. The motivation for doing so would have been to minimize image blurring, as taught by Kameyama (column 1, lines 44-51). Claim 9 is therefore unpatentable.”

In response, applicants note that the quarter-wave plate of the present invention is characterized as having a variation in thickness of 5% or less. The meaning of this limitation resides at page 29 of the specification, which states “The maximum value, the minimum value,

and the average value of the values at the 80 points were determined, and ‘[(maximum value - minimum value)/2]average value x 100’ was calculated. The resulting value was taken as the variation (%).”

Arakawa states at paragraph [0143] that “the peripheral velocities of the rolls 18, 20 and 22 were determined given the final thickness of 100 μm was the target thickness, and a film of laminated layers having an actual thickness of 102 μm was obtained.”

However, this description is not directed to the thickness of the film, but is merely directed to a disclosure of the average value of the thickness of the film. Thus, an optical laminate comprising a quarter-wave plate having a variation in thickness of 5% or less is neither disclosed nor taught by the Arakawa reference.

Further, the reference contains no teaching or suggestion regarding the relationship between a variation in thickness and an in-plane variation or color tone. Also, there is no description regarding the merits of using a quarter-wave plate having a variation in thickness of 5% or less in Arakawa as taught by applicants at page 17 of the specification.

The rejection appears based on the premise that the quarter-wave plate having components (i)-(iv) of the present invention is described in Arakawa. However, as discussed above, Arakawa fails to teach or suggest an optical laminate comprising a quarter-wave plate having a variation in thickness of 5% or less together with the other admitted deficiencies.

The additionally-cited Kameyama reference fails to cure the deficiencies of Arakawa. Kameyama discloses an optical laminate comprising a cholesteric liquid crystal layer, and a quarter-wave plate laminated on the cholesteric liquid crystal layer, and wherein the quarter-wave plate should have minimal variation in thickness. The Examiner previously acknowledged

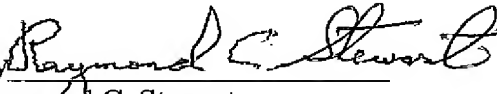
that the reference does not expressly disclose wherein the quarter-wave plate has a configuration consisting of the layer A, the layer B, and the layer A, or wherein the layer A and the layer B have the same molecular chain orientation. See page 3 of the Action of November 29, 2006.

Given the above-noted deficiencies of the cited prior art, the combined teachings of the references cannot result in the claimed invention.

The rejection is thus believed to be without basis and should be withdrawn. The application is now believed to be in condition for allowance, and an early indication of same earnestly is solicited.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Respectfully submitted,

By 
Raymond C. Stewart
Registration No.: 21,066


RCS/JWH/eb

BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Rd
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant